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TRANSLATIONS ON USSR MILITARY AFFAIRS  
(FOUO 1/79)

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# TRANSLATIONS ON USSR MILITARY AFFAIRS

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DEVELOPMENT OF SOVIET CIVIL DEFENSE SYSTEM ANALYZED

Stuttgart OSTEUROPA in German Vol 27 No 12, Dec 77 pp 1057-1068

[Article by Erich Ferdinand Pruck (born 1897), Colonel (ret), military science writer, lecturer, translator; Goslar, FRG: "Civil Defense in the Soviet Union"]

[Text] In the autumn of 1972, Col Gen A. Altunin, who today is still the head of the Main Administration for Civil Defense in the Defense Ministry of the Soviet Union, wrote an article in the army organ entitled "On Combat Alert" (KZv., 4 October 1972). [Please see appendix for abbreviations.] In that article he referred to the decree "On Air Defense In The Territory Of The USSR," which was issued on 4 October 1932, 40 years earlier, by the Council of People's Commissars (Sovnarkom), as the birthdate of "civil defense." This term, of course, has existed as such only since 1961; until then, this institution was called PVO, meaning "air defense." In a subsequent article, entitled "Main Phases and Tendencies in Civil Defense" (VIZh, November 1976, pp 39-47), Altunin went all the way back to Lenin who, supposedly as long ago as in 1905, noted that "the peoples are now making war" and who in 1918 already pointed up the "significance of the hinterland as far as modern warfare is concerned." The population reportedly was mobilized for defensive precautions whenever enemy aircraft approached Petrograd during World War I. During Civil War (1918-1921), cities threatened by enemy aircraft took local protective measures. The historian Col of Reserve A. Belyayev reported that Petrograd had a permanent air defense system in an article entitled "The Development of the Country's PVO, 1918-1941" (VIZh, No 8, 1973, pp 89-94). At that time the idea was to provide protection against TNT and poison gas bombs dropped from aircraft. Fear of gas attacks during those years seized the people no less than fear of atomic war today, maintains Werner A. Fischer in "Vorsorge in Rot" (Munich, 1966, p 19), making reference to an article published in VOYENNIY VESTNIK (Defense Herald), No 17, 1932.

Air defense measures from the very beginning were taken in terms of two different defense categories:

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1. The armed forces engage in active air defense (PVO), using special units and the corresponding weapons systems.
2. Local civil defense (MPVO) handles passive defense, in other words, the protection of the population and targets.

Both categories depend on the same air observation, warning, and reporting system (VNOS). SOVETSKAYA VOYENNAYA ENTSIKLOPEDIYA (SVE), Moscow, 1976, Vol II, pp 163ff., reports on the development of this VNOS network which emerged from rather primitive beginnings and which is today highly recognized and spread over the entire territory of the Warsaw Pact countries. The possibilities for information procurement in keeping with time and situation requirements as well as the rapid forwarding of data received were improved considerably due to the automation of the telecommunications system which extensively relies on radio electronics (SVE, Vol I, p 76f.). The Soviet Union continues to work in this field and keeps up with developments in the West. A book authored by V. A. Baranyuk and V. I. Vorobyev, entitled "Avtomatizirovannyye sistemy upravleniya shtabov i voyennykh utserazhdeniy" (Automated Guidance Systems), Moscow, 1974, in a special chapter investigates "The Automated Systems of PVO direction in the United States" and in the NATO area. Knowledge derived from such analyses is used as foundation for work on the problems of "scientific prediction in war" which Moscow gives careful consideration (Yu. V. Chuyev, Yu. B. Mikhaylov, "Prognozirovaniye v voyennom dele," Moscow, 1975; see also OSTEUROPA, No 5, 1975, pp A 547ff). Marshal of the Soviet Union Sokolovskiy wrote the following in his book "Militaer-Strategie" [Military Strategy] (3rd Edition, German, Cologne, 1969, p 438):

"Because the supreme air defense command has the most comprehensive data on the air situation and because it therefore also can best judge the danger of an attack on a particularly important point, it must inform the corresponding civil defense agencies which in turn will inform the population."

Development of Passive Air Defense

The passive air defense measures, taken during World War I, during the Civil War, and during the year thereafter, involved actions by self-protection associations which sprang up locally in a spontaneous manner or which have been set up by eager party organs. The issue of gas masks to the population in threatened parts of the country began in 1920. Technicians began to look into the problem of shelter construction. The author remembers having read an illustrated article on air raid shelters in urban residential blocks in a military-technical journal of the USSR during the middle of the twenties. The article recommended that a sheet-metal pipeline be extended from air-tight rooms over the roof and that fresh air be pumped manually through that pipeline into the basement.

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The MPVO complex received impetus and more specific form from 1927 on through the "society for the Promotion of Defense and Aero-chemical Development" (Osoaviakhim) whose activities are promoted from the top down and which is organized throughout national territory.

International tension, setting in during the thirties, caused the Soviet government--advised by military leaders such as Tukhachevskiy and others--to boost its defenses. As part of this undertaking, the entire territory of active and passive air defense--by decree of the Council of People's Commissars (Sovnarkom) of 5 April 1932--was transferred to the People's Commissariat of Army and Navy Affairs which on 20 July 1934 was converted into the People's Commissariat of Defense. A "PVO administration of RKKA" (Rabochye-Krestyanskaya Krasnaya Armiya--Red Worker and Peasant Army) was set up in the People's Commissariat for Army and Navy Affairs. Only the 4 October 1937 Sovnarkom decree led to the adequate clarification of the areas of competence and the missions. The Soviet administrative machinery still works bureaucratically and in a rather cumbersome manner also in the defense sector. It constantly needs new impetus to remain in motion.

The modernization of the weapons systems, which had become necessary, was also intended to raise the PVO and the technical facilities of the VNOS network to a level in keeping with the requirements of the times. Precautions were taken for the employment of MPVO in case of war in those border regions which were particularly seriously threatened. The party and Komsomol [Young Communist League] organizations, the labor unions, and the other mass organizations, especially Osoaviakhim, the Red Cross, and the Red Crescent were also involved in this effort. The PVO headquarters in the pertinent border defense district took care of management and assumed responsibility. The program involved the following:

Preventive measures to keep the national economy going in case of war;

Coping with the effects of bombing raids as well as the employment of chemical and bacteriological (biological) warfare agents;

Establishment of medical, rescue, and damage control service in wartime but also in disaster cases;

Preparation of an air raid warden service which would go into action in case of panic, disturbances, destruction, and law violations and which, for example, would have to see to it that uncontrolled streams of refugees would not interfere with the mobilization or movement of troops and with intended assistance operations (see NATO-Brief, No 1-2, 1971, p 13);

Propaganda and political-ideological indoctrination and instruction of the population as to rules of behavior in wartime;

Training of personnel earmarked for MPVO duty in their operational areas, PVO practice alerts and exercises.



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The planned establishment of "civilian self-protection groups" (druzhiny) was begun in the residential districts of major cities or in industrial plants and other places of work located in presumably threatened areas; in case of an air raid alert, these groups were immediately to go into action in accordance with the instructions contained in the operations program. Protective clothing and equipment were readied. In the rest of the nation's territory, the effort was confined nearly to informative propaganda. Miscellaneous precautionary measures were left up to local initiative. According to the historian A. Belyayev (loc. cit.), obligatory MPVO training courses for members of the "civilian self-protection group" were instituted by the Soviet authorities in 1935.

## Civil Air Defense in World War II

At the beginning of World War II, direction of passive air defense (MPVO) was transferred to the NKVD (People's Commissariat of the Interior), to relieve the burden on the People's Commissariat of Defense; the NKVD for this purpose established a "MPVO main administration."

After the invasion of the Soviet Union by German troops, Sovnarkom decree No 1812 was issued on 2 July 1941; it was entitled "On the General Duty to Train the Population for Air Defense" (Zakonodatel'stvo voyennogo vremeni, Moscow, 1941, p 22). All men not serving in the armed forces or otherwise exempt from wartime duty, between the ages of 16 and 60 and women between the ages of 18 and 50, had to participate in MPVO activities according to that directive. The MPVO main administration of the NKVD saw to it that the necessary measures were taken. By 1942, more than 6 million people were in the MPVO formations (A. Belyayev, VIZh, 1, 1975, pp73-77, see also further statistics there). Professor R. S. Teltukhovskiy describes MPVO duty as follows in his historical work entitled "Velikaya Otechestvennaya voyna Sovetskogo Soyuz 1941-1945" ("The Great Fatherland War, 1941-1945"), Moscow, 1959, p 67:

"During the first days of the war, the Moscow regional party committee and the regional soviet [council] of worker deputies took urgent measures to organize the protection of factories, electric power plants, telegraph and telephone communications, and to prepare the population for air defense. In Moscow and in other cities near the border, the Soviet people, under the direction of the local party organizations, placed industrial enterprises and government offices under their protection and created a "local air defense" (MPVO). The Muscovites established MPVO facility units, self-protection groups, as well as air defense and chemical defense posts (PVKHC) in every enterprise, in every government agency, and in all residential buildings. According to a resolution by the Moscow city committee, a special regiment was organized for fire-fighting purposes. The various borough fire-fighting companies were reinforced."

MPVO, which was directed by the NKVD during World War II, according to Soviet information during those years certainly proved itself--for example,

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in Stalingrad, during the fighting for the city, and in Leningrad (Belyayev, VIZh, No 1, 1975, Altunin, VIZh, 11, 1976).

Air Defense in the Atomic Age

After the termination of combat operations in World War II, the Soviet Union--which had been shocked by the effect of American atomic bombs dropped on Japanese cities--immediately began to put the practical lessons learned through MPVO in wartime to use in order further to expand the air defense system. So long as Moscow was indeterminably behind on the development of nuclear weapons and delivery vehicles, it kept asserting that atomic war, with its catastrophic effects, could no longer be a means of policy. After Sputnik and the ICBM, the concept was changed. In propaganda terms, we first witnessed a phase of pooh-poohing the effective nuclear weapons strikes. Then the thesis was put out to the effect that the vastness of Soviet territory, the decentralization of personnel and material, and the political-moral superiority of the better-disciplined and more class-conscious Soviet people added up to the Soviet Union's superiority over any potential foe (see OSTEUROPA, 8-9, 1965, p 590; 2, 1964, p 120).

The MVD (Interior Ministry), which sprang from the NKVD, remained the overall civil defense command authority. From 1955 onward, defensive measures taken so far against the threat from the air were extended to protection against effects of nuclear missile employment. That is when the authorities began to make evacuation plans. These related to organizations, government agencies, enterprises, and finally all population segments not locally employed or needed, in other words, mostly children and older people. The problem as to how the national economy could be kept going was contemplated on a larger scale. The DOSAAF (All Union Voluntary Society for the Promotion of the Army, Aviation, and Navy)--which had been established in 1948 as the successor organization to Osoaviakhim and which was completely organized by 1951--from 1955 on again, together with Red Cross and the Red Crescent, gave mass training courses imparting basic knowledge on MPVO tasks (see "Civil Defense Against NBC Weapons in the USSR," OST-PROBLEME, No 8, 1960, pp 226-232).

By the end of the fifties and the beginning of the sixties--"when imperialist circles in the United States and NATO pursued the adventurous policy of balancing on the brink of war and of a crash arms race and when their output of nuclear weapons increased," as Altunin put it in VIZh (Military-Historical Journal), No 11, 1976, p 44--active and passive air defense were further boosted. At that time, the "Strategic Rocket Forces" appeared as a new armed forces component in the national defense structure. Because of the tremendous range and destructive power of its long-range and intercontinental nuclear missiles, they ushered in a new epoch in weapons technology, in the theory of warfare, and in combat operations since they were suitable for employment on both offensive and defensive combat missions, including direct defense against enemy missiles. On top of that we have their political-propaganda value as a means of deterrence, threat, and blackmail.

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We will only briefly refer here to the future-oriented space strategy which has already been included in military planning (see OSTEUROPA, No 7, 1976, p 567) and which operates with killer satellites; we might also briefly mention here the subject of laser technology which is currently being pursued emphatically in scientific research and with whose help cosmic or other flying attack objects are to be destroyed. This kind of overview shows how things fit into place and how every attack weapon which happens to come out (or which is only indicated in outline) immediately causes countermeasures and new defensive devices.

The "Revolution in Warfare" (OSTEUROPA, No 8, 1965, p 528f.), brought about by the development of nuclear weapons and noteworthy technical advances in the area of conventional arms, provided fresh impetus for defense thinking in the Soviet Union in several respects. In July 1961, for example, as part of the switch to changed combat conditions and security requirements, as well as the deteriorating military-political situation and the objectives, the passive MPVO complex was organized as "main administration for civil defense" and placed within the Defense Ministry; guided air defense systems were also taken over thus and gradually integrated here. The main administration was taken over by a "chief of USSR civil defense." Next came the establishment of subordinate administration and departments which initially handled the integration work. The DOSAAF magazine VOYENNYE ZNANIYA (Defense Science) was designated as the civil defense bulletin. It has now become important for all organizations and persons active in this sector as a result of the expansion and growing significance of this special field. To stimulate the duty performance enthusiasm of assigned personnel, their work results are included in the system of socialist competition and the PVO decoration in the form of a clasp has been awarded for particularly outstanding achievements.

We can read the following passage in a book written in Moscow in 1964 by S. N. Koslov and others, entitled "O sovetskoy voyennoy nauke" (On Soviet Military Science), Moscow, 1964, p 390f:

"The establishment of so-called civil defense must be termed a new and important phenomenon in war today. In modern war, the dividing lines between the front lines and the hinterland disappear more and more. Combat operations can develop along the front lines and deep in rear areas. Missile units and the air force can carry out nuclear missile strikes against targets in the hinterland. Air forces however can also carry out conventional bombing raids. The enemy can drop airborne troops far behind the fighting forces. Sometimes strong groups of enemy armored or mechanized formations manage to achieve deep penetration. This is why the hinterland must be armed and in a position to beat off attacks by airborne troops and diversionary units and engage enemy tanks, which have broken through, with its own resources.

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## Civil Defense Expansion

At the end of 1964, Marshal of the Soviet Union V. I. Chuikov took over civil defense after he had lost the position of supreme commander of the ground forces in October of that year following Khrushchev's ouster. He held that position until 1971. His successor is Col Gen A. Altunin who was promoted to army general on 16 February 1977 (KZv., 17 February 1977). When military reforms became possible after Khrushchev's departure as head of government (see OSTEUROPA, 11 1975, p A-543), a new draft law was passed in October 1967 (KZv., 13 October 1967). Its Article 18 specifies that general civil defense service training must be included in the program of the newly-introduced 2-year obligatory premilitary training for youth. In a pamphlet written by him and entitled "Grazhdanskaya oborona v raketno-yadernoy voyne" ("Civil defense in nuclear rocket war"), Moscow, 1968, Chuikov lists the individual defense possibilities existing in addition to the collective one. Correct individual behavior in any situation presupposes familiarity with the individual threats. It is supposed to be the task of meaningful propaganda and training to impart these defensive skills and knowledge. On that point, the marshal has this to say:

"It is the duty of radio and television, the press, the movies, the cultural enlightenment services and the social organizations to present civil defense knowledge to the masses and constantly to expose the aggressive essence and insidious intentions as well as actions of the imperialist robbers and to make it clear to the people what kind of a situation has arisen."

He further states that special attention must be devoted to the ideological and scientific level of propaganda and training materials. Agitation must be made more impressive through practical instruction. Civil defense exhibits in industrial and agricultural enterprises, houses of culture, clubs, and in recreational areas could serve as information and advisory agencies. In his pamphlet (pp 13ff.), Chuikov divides the primary missions of civil defense into three groups. Altunin took that arrangement over and supplemented it in keeping with current developments (VIZh, No 11, 1976, pp 44-46).

Accordingly, the first group includes all precautions to be taken for collective and individual protection of the population against mass destruction weapons and other warfare agents, along with shelter construction, evacuation and decentralization in heavily populated, threatened regions, the procurement of gas masks, oxygen equipment for respiration, protective clothing, medical measures, and the entire training and information complex in the cities and in the rural areas. Altunin probably does not specifically mention chemical and bacteriological (biological) warfare agents because an international agreement, signed in April 1972, bans the production, development, and stockpiling of bacteriological (biological) and toxic chemical warfare agents and calls for the destruction of existing stockpiles (KZv., 11 April 1972). The danger of radioactive contamination

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continues to exist. The negotiations on the elimination of the abuse of natural forces and the development of new and more dangerous warfare agents, suggested in 1975 (SOWJETUNION HEUTE, No 18, 1975, pp 14 and 29), reveal that work continues to be done in this field and that one must expect the possibility of the employment of such warfare agents. Treaty concepts frequently can be interpreted in different ways, as past experience has shown.

The measures in the second group relate to the protection of the national economy in wartime. The most important thing is to keep industrial and agricultural production going. The resolutions later on adopted in this connection by the 25th Party Congress, as Altunin writes, call for general government organization changes and regional disconnections in this sector and are mentioned emphatically although no details are given.

The third group includes everything relating to the repair of damage caused, as well as the allocation of suitable manpower and the guarantee of smooth operation. This is obviously aimed at the employment of the police units and their auxiliary organs which are not included in the listing of these points.

Active participation by nonmilitary formations (factory detachments or druzhiny, medical and technical personnel, Komsomol groups, etc.) in fighting local forest, peatbog, or other big fires, as well as employment in case of natural disasters (earthquakes, hurricanes, floods) and their sequels, in Altunin's opinion, gives personnel concern practical experience, increases the action readiness, and moreover helps in obtaining better technical equipment.

Defusing wartime duds is another civil defense exercise subject. The army press from time to time reports on exercises which were staged by civil defense agencies in enterprises and "at other installations" (Col F. Nikoforov, KZv., 5 May 1976, and others). A radio report from the "Kommunarsk" smelter (Voroshilovgrad region) contains the following passage (KZv., 15 July 1976):

"Now the plant protection detachment consists of specialized sections and groups. The law-and-order section runs patrols together with the militia forces. As a result of this activity we note that, since the beginning of this year alone, the number of violations against law and order in the district dropped to less than half."

Col of the Reserve V. Arkhipov rather illustratively reports on the establishment and employment of volunteer female medical detachments at an electric power plant in Vladimir (KZv., 5 February 1976).

Additional exercise areas and buildings are being provided continually for the practical training of nonmilitary civil defense formations which account for by far the largest percentage of civil defense and rescue personnel. Courses are being given for management personnel in theory, practical

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experience, and training course assignments (Altunin, VIZh No 11, 1976, p 46). In addition to the above-mentioned mass organizations, athletic associations are being increasingly used for the training program and that includes especially GTO (Gotov k trudu i oborone--Ready for Defense and Work) as well as the Znaniye (Knowledge) society.

## Command Mechanisms

The integration of the civilian self-protection associations throughout the country, which sprang from individual initiatives, into a general governmental civilian MPVO system was a difficult development process rich in frictions in whose courts it was necessary to reduce a wealth of differing interests to a common denominator. Several people's commissariats (later on converted into ministries) and other, parallel-acting administrative agencies advanced their separate claims for influence. In addition to party and military concerns, there were the concerns of the national economy branches, science and research, the public health service, the telecommunications system, the construction and transportation industries, the security service and the police (militia), just to mention the most important. The up-and-down line in the chain-of-command management and supervisory structure accordingly also ran along a multitrack and many-layered (partly also rival) pattern. The contradictions that can be noted in Soviet literature show how difficult it is even for the initiated to describe this developmental process. Belyayev, for example, (VIZh, No 9, 1973, p 90) reports that the direction of active and passive air defense was placed in the hands of the People's Commissariat for Army and Navy Affairs already on 14 May 1927 on the basis of a decree issued by the STO (Sovet truda i oborony--Council for Labor and Defense). The contradiction in the statements by Altunin and Belyayev can be explained in the light of the double track setup of the military and political leadership which at that time was more pronounced in the Red Army (RKKA [Workers' and Peasants' Red Army]) than it is today in the Soviet armed forces. Osoaviakhim went into action in 1927 and became decisively involved in the MPVO system. According to Belyayev (loc. cit., p 91), "the political administration of the RKKA had taken over the general direction of the dissent societies back in 1924." Initially we were thus dealing here only with indirect military influence, not direct management of MPVO. Apart from that, common features between active and passive air defense resulted already from the fact that both of them were dependent upon the VNO system and both of them were supervised by the party. The MPVO main administration--regardless of whether it may have been under the People's Commissariat of Defense, the NKVD, the MVD, or the Defense Ministry--coordinated primarily along a horizontal line with the staffs set up under its duty station. Most of the practical MPVO activities and most of the responsibilities were retained by the chairmen of the executive committee of worker deputy councils. This view is supported by an essay by Col Gen Grekov, the head of the political administration under civil defense, in an essay entitled "Civil Defense is a Matter for the Whole Nation," in which he says the following:

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"Civil defense in the Soviet Union is organized according to territorial and production principles. This means that the planning and execution of all measures are accomplished both by the councils of worker deputies and by the ministries, bureaus, and government agencies which perform a corresponding enterprise or economic function. The edicts of the Presidium of the Supreme Soviet USSR, dated 19 March 1971, on the basic rights and duties of the district and city councils of worker deputies specify that they must see to it that the general military duty law is properly implemented and that they are responsible for the direct management of civil defense in the urban or district areas. The managers of enterprises, government agencies, institutions of learning, collective farms, and state farms are responsible for the preparation of defense against mass destruction weapons. They are divided with extensive rights and will fall back on social mass organizations for assistance (...). Staffs have been set up to manage civil defense personnel and resources; they must use the experiences of military cadres and national economy specialists in the course of their activities. Many members of the military are assigned to those staffs (...). The civil defense staff of cities, districts, and major installations of the national economy are supplemented mostly by engineers and technicians as well as employees from the enterprises, duty stations, and organizations. Reserve officers or retired officers as a rule are in charge of those staffs, especially on the district level.

"It is known that USSR civil defense measures are so comprehensive that it is impossible to carry them out without the guiding activity of the party and its agencies in those places where they are supposed to be accomplished. In this context it must be noted that the party agencies in the republic, states, regions, and districts as well as the primary party organizations constantly try to strengthen civil defense (...)" (KVS, No 19, 1972, p 21).

A newspaper dispatch from the Turkestan military district shows just how far participation in civil defense, as a major government project, goes.

"A meeting of the military district's military council has been held here. The results of exercises so far held in the area of civil defense were discussed; progress and experience were reported on and the tasks for the coming year's exercise program were spelled out. Col Gen S. Belonoshko delivered a lecture. The military council's working session was attended by the following: N. Khudayberdiyev, chairman, Council of Ministers, Uzbek SSR; B. Yaskuliyev, chairman, Council of Ministers, Turkmenian SSR; G. Arkhangelskiy, head of a Central Committee department, Uzbekistan Communist Party; as well as ministers of the Central Asian Union republics, chairmen of the regional executive committee, and the chiefs of the civil defense staffs in the ministries and government agencies" (KZv., 15 December 1976).

At the end of his article (VIZh, No 11, 1976, p 46f.), Altunin presented a short overview of the developmental history of Soviet PVO which he subdivided into five phases. As the last point, he establishes the requirement for constantly expanding, perfecting, and strengthening the technical

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base of civil defense. He coupled that with a warning to the effect that growing significance must be assigned to close cooperation between civil defense and the armed forces.

**Civil Defense Troops**

We can find information on the existence of "special civil defense troops in Sokolovskiy's "Military Strategy" (loc cit., pp 439ff.):

"Because we must expect tremendous destruction and casualties as a result of the enemy's thermonuclear strikes, we must establish a large number of special civil defense formation to cope with the consequences of an enemy attack against the hinterland. This may involve detachments of the rescue, repair, and medical service and motor vehicle convoys. They must be so equipped that they will be in a position to cover greater distances with their own vehicles.

"To make sure that civil defense troops will be in a position to accomplish their mission, they must be stationed at suitable distances from big cities and industrial complexes."

Soviet military literature gives no information on the strength, makeup, and employment of these special units. Accordingly, the generally well-informed Austrian Friedrich Wiener ("Die Armeen der Warschauer-Pakt-Staaten" [The Armies of the Warsaw Pact Countries], Munich, 1974) and "The Military Balance 1976-1977" (London, 1976), likewise have no data, for example, on the numerical strength of the construction units, the fire-fighting regiments, and other special formations of that kind. Only Leon Goure, in his highly informative book "War Survival in Soviet Strategy" (Loral Gables 1976, p 74; see also OSTEUROPA, No 5, 1977, p 454), speaks of the growing strength of the military civil defense units which have been estimated at 40,000 men. Citing Sokolovskiy, he mentioned, as their primary missions, the maintenance of communication, communications monitoring, radioactive and chemical contamination monitoring, and difficult engineering tasks as some of the subjects to be taken up in the course of rescue and repair activities required after an atomic strike.

These units are also to be used to defuse duds and for disaster assistance. They have their own communications network, their own transportation--motor vehicles, ships, and aircraft (helicopters)--for observation and employment on land, on the water, and from the air. After an atomic strike, it is important to be able to reconnoiter the territory hit from the air. In view of the task areas described and the vast size of the Soviet Union and the other Pact countries, the personnel strength given by Goure seems to be too small. It would appear that it has been increased considerably as part of the development program carried out since he wrote his book.

The existence of a "Moscow Military School for Civil Defense" (KZv., 7 March 1973) constitutes reliable confirmation of the existence and further



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expansion of civil defense units. This teaching institution, located in Balachikha, gives 3-year courses under conditions customary in military schools (see OSTEUROPA, No 2, 1977, p 141), featuring middle-level specialized military training, leading to commissioning as 2d Lieutenant, and a certificate as mechanic-technician for road construction, construction equipment, radio communications, or analytical chemistry. Goure reports (loc. cit., p 74) that the first graduates left this teaching institution in 1969. Obviously, the influx was too heavy--otherwise the institute would more frequently try to recruit students. It can be expected that it will be expanded into a military college. It is furthermore to be assumed that the Military Academy of rear-area services and transportation--which operates departments in various special fields--and the Military colleges of rear-area services in Volsk (with a branch in Gorkiy), Moscow and Leningrad, as well as the military construction colleges (see OSTEUROPA, loc. cit.) are training officers for civil defense duty.

From the essays by Altunin (VIZh, No 11, 1976, p 41) and Belyayev (VIZh, No 1, 1975, p 74) we can see that, as part of civil defense, political training and supervisory agencies, political administrations, and the commanders' deputies for political affairs (Zampolit, formerly called Commissar) were and are being utilized.

## Civil Defense As Strategic Component

The course of mobilization deployment, and the initial phase of the war depend on a well-thought-out civil defense organization and the way it operates in case of war. Civil defense must secure the home front and must guarantee the smoothest possible supply of the forces in the field and the population through the rear-area support services. Accordingly, civil defense, from the outbreak of war, plays a decisive role in the outcome of such a war. Sokolovskiy commented rather extensively on that subject (loc. cit., chapter on "Civil Defense," pp 440ff.). Grechko supplemented the statements to the effect that civil defense develops into a strategic factor which is important to the survivability of the states ("Vooruzhennyye Sily sovetskogo gosudarstva," Moscow, 1974, p 107f.). None of the authors who commented on this topic and who have been mentioned so far pointed out that this matter was already covered under Stalin when he put "security to the rear of the front and in the hinterland" in first place in his five-point program of prerequisites for victory, in February 1942.

In connection with the need for a reliable defense of the hinterland, which he confirmed, Grechko points to the significance of a defense-oriented, patriotic education effort among the people, enthusiastically carried out by all appropriate agencies. He maintains that readiness to engage in total warfare among Soviet people of both sexes and in all age groups depends on the success of that education effort. The state demands that every one do his utmost in terms of moral and physical strength and display extraordinary endurance (loc. cit., pp 108ff.).

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According to Soviet military doctrine (see OSTEUROPA, No 11, 1975, pp 930ff.), "surviving" the first nuclear strike and the ability afterward to mount a decisive counterstrike constitutes the prerequisite for the successful outcome of future armed conflicts on a major scale with the participation of countries having atomic weapons. This survival aspect of the states includes civil defense as a decisive component in overall strategic war planning. In this part of the armament effort the Soviet Union likewise seeks to achieve absolute superiority because it alone--according to Moscow's justification propaganda--guarantees security and peace. This superiority of the protective function of civil defense alone gives the Soviet Union the freedom to engage in the semi-strategic employment of nuclear weapons at a point in time of its own choosing. The superiority theory, for the first time emphatically introduced by defense minister Malinovsky (PRAVDA, 4 February 1959; see also OSTEUROPA, No 5-6, 1959, p 261) was at first interpreted by the West only as a dialectical trick. Today, expert policy makers and military leaders have a different opinion on the basis of reliable information.

In the foreword to the book by Leon Goure (loc cit., p XI), former United States ambassador Foy D. Kohler observes that the measures taken by Moscow for civil defense and survival in case of war constitute a firm component of Soviet military strategy; that they have been considerably stepped up in connection with coexistence and detente as compared to the United States; that Moscow's striking power has thus been increased; and that the risks of a nuclear war thus have become less for the Soviet Union. The USSR would, with this kind of lead, be able not only to survive but also win a nuclear war. Just as critical is the evaluation provided by Guenther Gillesen, the correspondent of FRANKFURTER ALLGEMEINE ZEITUNG (FAZ, 28 December 1976), who has a military background, on the basis of data in the American magazine SCIENCE, 10 December 1976. The magazine reports on new discoveries made by American satellites which took pictures of gigantic shelter structures in the Soviet Union. These are underground factories, grain silos, communications centers, shelters for the civilian population and the troops, weapons, equipment, and rations.

Gen George Keagan, the former director of intelligence of the United States Air Force, in a conversation (FAZ, 12 February 1977, p 17) summarized his views to the effect that Moscow could "trigger, survive, and win a global war."

Such objective observations make the warning of the "Soviet peril"--which the Kremlin repeatedly rejected as a "figment of the imagination" (OSTEUROPA, No 6, 1977, pA-333f.) nevertheless appear justified. Moscow's absolute superiority in the area of civil defense is bound considerably to weaken the strategic starting position of the NATO countries as against the Warsaw Pact countries.

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ABBREVIATIONS APPENDIX

KZv.--KRASNAYA ZVEZDA [Red Star]; VIZh--VOYENNO-ISTORICHESKIY ZHURNAL [War History Journal]; KVS--KOMMUNIST VOORUZHENNYKH SIL.

Frequently encountered abbreviations and their meaning:

PVO--protivovozdushnaya oborona--air defense (AA defense, air raid protection);  
MPVO--mestnaya protivovozdushnaya oborona--local air defense (local air raid protection and AA defense);  
VNOS--vozdukhnoye nablyudeniye, opoveshcheniye i svyaz'--air observation, warning, and reporting system;  
Osoaviakhim--Obshchestvo sodeystviya oboronye, aviatsionnomu i khimicheskomu stroitel'stvu SSSR--Society for the Promotion of Defense and Aerochemical Development;  
DOSAAF--Vsesoyuznoye dobrovol'noye obshchestvo sodeystviya armii, aviatsii i flotu--All-Union Voluntary Society for the Promotion of the Army, Aviation, and Navy.

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ENCYCLOPEDIA ENTRY: TESTING OF MILITARY EQUIPMENT

Moscow SOVETSKAYA VOYENNAYA ENTSIKLOPEDIA in Russian Vol 3, 1977 pp 616-618

[Entry by N.N. Alekseyev from the Soviet Military Encyclopedia: "Testing of Military Equipment" (Ispytaniye voyennoy tekhniki)]

[Text] Testing of military equipment is the experimental determination of the combat, structural and operational features of test (pilot) models and series-produced items of military equipment for purposes of establishing their conformity to tactical-technical specifications. The data obtained from the tests are summarized in the form of conclusions describing the level of development of the experimental models and the possibility of adopting them, and the possibility of delivering series-produced articles to military organizations. The basic technical document regulating the requirements for an experimental model is a tactical-technical task assignment (TTZ) issued by the client. It indicates the following: the purpose and goal of the development, the tactical-technical, technical-economic and special requirements applicable to the model, the composition and phases of development of the design documentation, and others. Coordination and approval of the tactical-technical task assignment is mandatory for organizations of the client and the developer during the designing (building), testing and acceptance of the test model. The testing program and methods are compiled from the tactical-technical task assignment requirements. The approved technical specifications (TU) are the basic document establishing the requirements for a series-produced article. They indicate the following: the purpose, area of use, main tactical-technical data, and the parameters of an article necessary for an objective assessment of its suitability for delivery to the consumer, quality control methods, the types and extent of tests of an article and its component parts, the warranties of the producer-enterprise, durability, packing and shipping requirements, the rules for drawing up the design documentation, and so forth. The characteristics and parameters obtained in the process of testing the experimental model, taking appropriate additional development into account, serve as the basic data for developing the technical specifications. The technical specifications coordinated and approved by the client are mandatory for all enterprises in the production and delivery of the article, as well as for all consumers of the article in the verification of its quality. Technical specifications are not worked out if there is a standard in existence for a given article, which

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establishes all of the essential requirements for its production, quality control, delivery and so forth. If it is necessary to include new requirements not covered in the state standard, technical specifications are compiled, serving as a supplement to the standard.

Field tests performed under conditions approaching actual operating conditions to the maximum degree possible comprise the basis for the testing of experimental models. Certain phases of field tests are replaced by modeling in order to reduce the volume, time and cost of the tests. Modeling is especially valuable in those cases when it is impossible to recreate an actual situation such as appraising the performance of the combat task with complex air defense models (complexes) in a situation of massive air raids, radioelectronic counteraction, the use of nuclear weapons, and so forth. In order to compare and evaluate the qualities of newly created (modernized) models with respect to the most important parameters obtained in various climatic conditions, the values of these parameters are corrected (converted) for normal conditions. Depending on the purpose of a model it is subjected to tests varying in scope, which are defined by their program and methods. The program contains the objectives and tasks of the tests and methods for determining and evaluating the characteristics of the model, primarily its combat effectiveness, the time allocated for conducting the tests and basic measures to be performed in support of them. As a rule, the testing program for experimental models takes into account their specific features and is developed on the basis of a standard program of tests for a given type of military equipment. The testing schedule is worked out after the program has been approved. The testing methods cover the following: the types, the procedure, standards and techniques (methods) for checking a model's conformity to the requirements of the tactical-technical task assignment; the composition of testing, measuring and simulation equipment; and the procedure and methods for processing the results of measurements.

Depending on the purposes of the tests they are classified as plant (designer's) tests, which are set up and conducted by the general (chief) designer, and state (range, troop) tests, which are set up and conducted by the client. The former are preliminary, the latter acceptance (final [zachetnyye]) tests. Plant (designer's) tests are intended for verifying the conformity of the model's basic characteristics to the requirements contained in the tactical-technical task assignment, to perfect its elements and all of the main assemblies, aggregates, instruments and systems, to perfect the model as a whole, and to evaluate the degree of standardization and unification. The program and methods for the plant tests are developed by the enterprise designing the products and are coordinated with the manufacturing enterprises and the client. As a rule, the tests are conducted by a commission made up of representatives of the designers, manufacturers and clients. The commission's conclusions are drawn up in the form of a document explaining the test results, indicating recommendations for correcting the design documentation and eliminating any deficiencies (malfunctions) detected, recommending target dates for final development, and giving the commission's conclusion with respect to submitting the model for the next type of tests or returning it for additional work.

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State (range, troop) tests are intended for determining the basic combat, design and operational characteristics of the model under the actual conditions in which it will be used or a simulated situation, for establishing the conformity of these characteristics to the requirements contained in the tactical-technical task assignment, and for appraising the model's suitability for adoption by the military and the possibility of its series production. According to the methods and conditions for conducting these tests they are divided into laboratory (bench) and comprehensive (flight, running, firing and other) tests. Many test items (artillery and infantry weapons, troop communications equipment, motor transport, and others) are subject to range (laboratory and comprehensive checks) as well as troop tests. Based on the results of the range tests it is recommended that a test item be adopted or its suitability for manufacture in a lot for troop tests is established. The combat effectiveness and the readiness of an item for adoption are determined (clarified) in the latter. State (range) tests are conducted at special testing grounds, which are outfitted with the proper technical metering equipment for registering and processing the results of the measurements, targets, routes and fields for running tests, modeling facilities, and so forth. The test (pilot) model being tested is checked to see that it performs its combat tasks (functions) effectively, taking into account enemy counteraction and emergency situations. The item is tested for reliability (dependability, durability, controllability, maintainability, service life, and so forth), design development and execution, level of technical competence, resistance (to radiation, chemical and mechanical stresses, during transportation and storage, and so forth), resistance to climatic factors and external physical fields (gravitational, magnetic, electromagnetic radiation and so forth), provision of the conditions essential for the combat crews to operate, resistance to various agents (CW decontamination, disinfectant, radioactive decontamination, and so forth), oil, fuel, and so forth. The design documentation is also checked during the state tests to see that it is complete, properly filled out and corresponds to the system (model) and its elements. The specific features of various types of items are taken into account in the programs and methods for conducting state tests, which are developed and approved by the client and coordinated with the developers and the enterprise manufacturing the test model. The tests are conducted by state commissions made up of representatives of the client, the developers and producers of the test model. The commission arranges for the tests to be conducted within periods established by the program and checks the testing, control and measuring equipment and the completeness of the normative-technical documentation specified by the program and methods. An act (report) is compiled from the test results. It establishes the test results, provides recommendations for eliminating any defects or malfunctions detected and for correcting the design and technological documentation, recommends target dates for additional work and for the elimination of any defects or malfunction detected, and indicates the commission's decision as to the possibility of adopting the model and the feasibility of submitting it for series production. A plan-schedule covering additional and final work on the test model is compiled when necessary. An item which has passed all of the state tests completely is submitted by the established procedure for adoption.

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The testing of series-produced items of military equipment includes acceptance and transfer, periodic and standard tests. Acceptance and transfer tests are conducted for purposes of checking the conformity of series-produced articles to the requirements contained in the technical documentation (technical specifications) and standards covering the basic indices characterizing the properties of the articles (composition, structure, design, transportability and so forth), their reliability, the level of employment of standardized and unified parts, and so forth. Depending on the production volume items are subjected to selected (in the case of mass production) or continuous (in the case of small-series production) control testing. A representative of the client gives his conclusion as to the conformity of a batch of articles to the specifications indicated, based on the results of the acceptance and transfer tests. Periodic tests are used to inspect finished articles which have passed preliminary acceptance and transfer tests and are conducted at certain intervals (every one, three, six or twelve months, for example) or after a certain quantity of the articles has been produced. The purpose of the tests is to verify the quality of the manufactured articles for conformity to all specifications contained in the technical documentation (technical specifications) and the standards and the stability of the characteristics, as well as to confirm the conformity to these requirements of articles previously produced and shipped to the client. If the test results are unsatisfactory even for a single sample the acceptance of articles subsequently produced and the shipment of products previously accepted are halted until the defects are eliminated. Standard tests are conducted after changes have been made in the design of an article or its manufacturing technology for purposes of evaluating the effectiveness of the changes made. The client, with the agreement of the manufacturing enterprise, determines the need for conducting standard tests and their extent. When good results are obtained in the standard tests proposed changes are entered in the technical documentation for the item.

Three phases of testing--first, second and third categories--are systematically conducted in the U.S.A. and the other main capitalist nations. Tests of the first category are mainly conducted by the contracting firm, with the clients participating. These tests determine the conformity of the characteristics of an item and its systems to the requirements set forth, reveal defects and malfunctions, and determine the need for adjusting the requirements made. As a rule, tests of the second category are conducted at military testing grounds by client organizations, with the contracting firm participating. A comprehensive check is made of the item's conformity to the requirements set forth, the results of the first category if tests are confirmed, and a conclusion is drawn as to the possibility of using the item in combat. Tests in the third category are conducted by the branch of troops for which the item is intended. The purpose of these tests is to evaluate the combat capabilities of industrially produced samples and to determine the most effective methods for their combat employment and methods of operation.

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CIVIL DEFENSE FORMATIONS COPING WITH NATURAL CALAMITIES

Moscow FORMIROVANIYA GRAZHDANSKOY OBORONY V BOR'BE SO STIKHIYNYMI  
BEDSTVIYAMI in Russian 1978 signed to press 25 Jan 78 pp 1-19, 244-247

[Annotation, Table of Contents, Introduction, and Chapter 1 of book by  
A. T. Altunin]

[Excerpts] Title Page:

Title: FORMIROVANIYA GRAZHDANSKOY OBORONY V BOR'BE SO  
STIKHIYNYMI BEDSTVIYAMI (Civil Defense [CD] Formations  
in the Struggle With Natural Calamities)  
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Annotation

Presented in the book are the basic guidelines for the training and employment of CD formations during natural calamities, elimination of their aftereffects as well as elimination of the aftereffects of large industrial accidents and catastrophes. Recommendations are presented on the tactics of formation operations and methods for carrying out operations in the struggle against natural calamities and in the organization of the material, technical, and medical support to suffering regions. In this edition the sections on forest and peat fires, earthquakes, floods, and industrial accidents have been supplemented and chapters have also been written in which the operations of CD formations in the struggle against mud slides, landslides, and avalanches have been examined.

The book is intended for the CD supervisory staff and the formation command and supervisory staffs.

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## Introduction

[Text] Recent achievements in all spheres of science have .. man's notion about various natural phenomena. Many of them, even .. explained and disastrous in their consequences, have now been well studied and man has learned to fight them. However, even during the .. of .. scientific and technical progress, the natural effects of nature's forces, still not fully subjugated by man, inflict enormous damage to the .. population and economy of the states on our planet. Forests and peat fires, earthquakes and floods, mud slides and landslides, avalanches, .. and hurricanes--this is far from a complete listing of the most common natural calamities.

In some instances the activities of people themselves lead to the occurrence of some of these calamities. For example, forest and peat fires often occur as a result of the population not adhering to fire safety rules. If timely measures are not taken such fires can grow to become a natural calamity. Today fires are becoming one of the main dangers for man. Statistics on the aftereffects of fires in recent years give witness to the truth of such a conclusion. In particular, in 1972 alone there were 2.5 million fires in

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the USA in which approximately 12,000 people perished and approximately 300,000 were injured. The overall material cost is evaluated at 11 billion dollars.

Fires inflict great material harm on the national economy of our country. The forest fires in 1972 and 1976 in a number of the krais and oblasts in the RSFSR remain in the population's memory.

Albeit paradoxical, it is in these very same highly developed industrial states where the cities and settlements contain structures primarily built of stone and reinforced concrete, with hot water, gas, or electric heat, with a well-organized fire-fighting service where the number of fires and losses resulting from them become more and more significant. Wide use of new building materials with a higher degree of flammability, the colossal scales of the economy and automation of technological processes have complicated the accomplishment of fire safety measures and have increased the probability of fires breaking out.

Also of significant cost to the national economy are such phenomena as the explosion of natural gas widely used in the national economy. Instances of large explosions connected with an accumulation of natural gas--methane in various types of buildings are well known. When gas accumulates in a closed space, in a tunnel for example, then when mixed with air it forms a flammable mixture which can ignite at any moment from even the smallest spark.

An accumulation of methane was registered, for instance, in the dam at the Kama GES 4 years after its water reservoir began to fill up. In a number of places the methane was detected in open mining pits deep within the basic rock. All this indicates the necessity to strictly adhere to safety measures when doing construction work in areas that contain natural gas and stipulate the necessity for training special emergency rescue formations for operations in similar situations.

Earthquakes are among the most dangerous and destructive natural calamities. An earthquake that was tragic in the number of lives that it took was the one that occurred on 26 July 1963 in the Yugoslavian city of Skopje. It took 2,000 lives and left 85 percent of the city's inhabitants homeless. During an earthquake in Peru on 31 May 1970 50,000 persons perished.

The worst earthquake in the USSR occurred on 6 October 1948 near Ashkhabad. In 1966 a strong earthquake near Tashkent lasted several days. In 1976 in Tadzhikistan more than 26 subterranean shocks with a force exceeding 5-6 balls were registered. Thanks to the fact that residences, public buildings, and industrial structures were built taking into account the possibility of shocks reaching a force of 9 balls, no damage was incurred.

Floods cause great calamities. Given the unfavorable combination of high spring run off and strong winds an unusually rapid rise in the water level in the rivers occurs and this can lead to dangerous consequences. History knows many catastrophic floods which took thousands of lives and caused

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enormous material losses. Thus, during a bad flood which occurred on 1 February 1953 on the southern coast of England and in the littoral regions of Holland 1,800 people died, 133 Dutch villages were seriously damaged, and the financial loss exceeded 400 million dollars. In August 1973 due to torrential rains the Indus River in Pakistan and India overflowed its banks. Twenty-two cities and 10,000 villages were flooded, more than 1,000 people died, approximately 800,000 people were left homeless, and the water destroyed more than 1 million structures.

Floods often occur in our country, which is rich in rivers and lakes. This usually happens in the spring in the West European portion of the country and during the summer as the snow melts in the southern mountainous regions.

In the fall of 1974 as a result of abundant rainfall serious flooding occurred in Brestskaya Oblast of the Belorussian SSR. Thanks to the proficient and decisive actions of CD formations possible harm to the national economy was averted.

In a majority of cases flooding can be forecast and the necessary measures taken in time to prevent the possible destructive aftereffects of the natural calamity. Dikes and dams as well as other hydrotechnical structures which permit the regulation of water levels are built to protect populated points and national economic installations located in zones of possible flooding. However, there are instances of unforeseen catastrophic flooding which usually occurs during a sharp change in the flow of the rivers as a result of various natural causes. Among them are, for instance, the flooding which occurred in October 1963 in Northern Italy due to the sudden discharge of more than 237 million m<sup>3</sup> of dirt into a water reservoir. The resultant flooding took approximately 3,000 lives and caused enormous financial harm to the country's economy.

A rock slide occurred in 1964 on the Zeravshan River in the Uzbek SSR 160 kms from Samarkand. The obstacle which blocked the river was 200 m high and 400 m wide. This brought a threat of flooding to Samarkand, located downstream. Thanks to the extreme measures taken--putting discharge channels through the obstacle using the engineering equipment sent to the scene--the threat was eliminated.

Landslides are dangerous natural calamities. They often destroy large areas of agricultural land, ruin roads, buildings, and structures. Landslides mainly occur in our country in the mountainous regions of the Crimea, Caucasus, Carpathians, as well as on the steep high banks of several rivers.

Engineer-technical measures which insure regulation of the water flow in a dangerous zone, the capture and discharge of the water away from this zone, strengthening the banks of rivers, and so on are taken to prevent landslides.

Mud slides which destroy populated points, residential and commercial buildings, railroads, highways, and hydrotechnical structures cause a great deal of calamity. Thus, as a result of a mud slide which occurred in 1970 in Peru, several cities were destroyed and 800,000 people were left homeless.

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Floods, landslides, and mud slides are often caused by downpours and hurricanes. Hurricanes destroy buildings and put exposed communications and electric power lines out of commission. Continual monitoring using radar, earth satellites, and special high-altitude aircraft to monitor the development and movement of hurricanes is employed to insure that the population receives timely warning about the threatening danger.

One other danger--avalanches--threatens man in the mountainous regions where there is snow cover. Thus, in 1965 an avalanche in the mountains of British Columbia destroyed a mining settlement and killed 26 people. During the winter of 1969-1970 tragic events occurred as a result of avalanches at resort areas in France and Switzerland. This all took place as a result of the fact that the corresponding protective measures were not taken.

Protection against avalanche includes not only the construction of capital structures but also the building of fill areas made of local materials which can assist in diverting the direction of movement of the avalanche away from protected areas.

But, it is not only natural calamities that cause destruction of buildings, the death of people, and financial loss. Large accidents and catastrophes at construction sites, transportation areas, industrial enterprises, and other national economic installations also lead to bad consequences. Most often accidents occur as a result of the violation of an industrial technology or safety equipment. For example, during the summer of 1976 there was an accident at the Icmesa Chemical Enterprise in the village of Seveso (Italy). A safety valve on one of the reactors failed and poisonous gases escaped. The threat of poisoning hung over other large industrial settlements besides Seveso. As a result an enormous territory turned out to be uninhabitable and the population had to evacuate and work stopped at a number of enterprises.

The battle against natural calamities is complicated and often involves threat to life. It requires from people the manifestation of civil courage, self-possession and organization. People have been taught to prevent their possible aftereffects in a timely manner and to skillfully and selflessly go to work in the face of a direct threat of flooding. At the same time we know of instances when, due to confusion and lack of organization, people became the victims of natural calamities even when the situation was not that bad.

In the fall of 1975 a tornado demolished the gigantic water towers at Sochi, Adler, and Khostu, tore the roofs off of homes, tore gigantic trees up by the roots, knocked down electric power lines, and twisted railroad tracks. Tens of thousands of well-organized people skillfully led by party and Soviet organs engaged nature in hand-to-hand combat. Thanks to this, losses due to the natural calamity were relatively insignificant and the normal life of the cities was rapidly reestablished. At the same time, on the northern slopes of the Caucasus range where a tourist group was located, just an echo of this tornado in the form of hurricane winds and snow was encountered. But, the people became confused, they panicked, and, as a result, several perished.

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There is always the danger of human loss during natural calamities, industrial accidents, and catastrophes. Thousands and even millions of people can be subjected to danger in cities. In our country, when we discuss human lives, we consider justified all expenditures and efforts directed towards insuring the safety of the population.

In the Soviet Union, CD staffs, units [chast'], and formations, military units of the USSR Armed Forces, as well as special ministerial and departmental formations can be called upon to battle large natural calamities and to liquidate their aftereffects. A grouping of forces, the composition of which is determined by the types and scales of the natural calamities and accidents, by the nature and volume of the missions to be accomplished, as well as by the special features of local conditions, is created for these purposes.

A large role in the battle against natural calamities and eliminating their aftereffects falls to CD formations. It is they that possess the more organized and trained command and control organs and the resources for accomplishment of rescue and urgent emergency restoration operations.

CD staffs are, as a rule, the operating organ attached to extraordinary commissions. They accomplish the basic work to organize the rescue of the population and of valuables as well as reestablishment of vital activities in stricken populated points and at national economic installations. CD staffs participate in the elaboration and organization of preventive and preparatory measures directed towards reducing losses during possible natural calamities, accidents, and catastrophes. When the danger of a natural calamity arises CD staffs organize the notification of the population and gathering of information on the situation which is developing at national economic installations and they prepare proposals for employment of CD resources. Subsequently as CD forces set about accomplishment of their assigned missions, the staffs organize command and control and monitor the progress of the operations.

There are many examples of the selfless and successful work of the CD staffs and forces in the battle against natural calamities and accidents and when eliminating their aftereffects. Thus, a complex situation was created in November 1975 in the Odesskaya and Nikolayevskaya oblasts of the Ukrainian SSR and in the Moldavian SSR as a result of a natural calamity caused by a powerful storm. It was necessary to proficiently adopt extraordinary measures for rapid restoration of the normal activities of stricken cities and regions and of national economic installations.

CD staffs, services, and formations implemented the decisions of the CD chiefs in the Moldavian SSR and in the Odesskaya and Nikolayevskaya oblasts. The CD staffs became the main operational organ of the extraordinary commissions, they went on round-the-clock duty, collected and generalized operational information on the situation, prepared and disseminated the instructions of the CD chiefs down to the executors, and monitored their accomplishment.

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The CD formation is the mass unit of the CD forces, the personnel of which given normal conditions carry out daily national economic activities in their labor collectives. At the same time the formations have been supplied with special equipment and, during the lessons, receive the requisite special training for operations in regions where natural calamities and industrial accidents have occurred.

Know-how in battling large forest and peat fires during the summer of 1972 in a number of the country's oblasts, the gigantic mud slide which threatened the tract of Medeo and Alma-Ata in 1973, the aftereffects of the earthquake in Gazli in the spring of 1976, and the hurricane in Khabarovskiy Kray in October of the same year convincingly showed the necessity and effectiveness of enlisting CD formations to fight natural calamities, as well as the importance of planned practical instruction of personnel to operate under similar conditions. Where this question is given the requisite attention, the battle against nature is conducted more successfully and the aftereffects themselves do not reach catastrophic dimensions.

Operating in a complex and often dangerous situation, CD formations exhibit courage and heroism when accomplishing rescue and urgent emergency operations and when saving the population and valuables. Participating in the battle against natural calamities and when liquidating their aftereffects, as well as the aftereffects of large industrial accidents and catastrophes, CD formation personnel are accomplishing their patriotic duty to the motherland.

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Chapter 1. Principles of the Training and Employment of CD Formations During Natural Calamities and Industrial Accidents

1. Principles of organizing and training CD formations

Formations<sup>1</sup> organized on the basis of national economic installations<sup>2</sup> are the foundation of CD forces. These formations are manned ahead of time, supplied with transportation, special equipment, articles, and instruments according to established norms, and are trained according to the corresponding programs.

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<sup>1</sup>For brevity in the future CD formations will be referred to as simply formations.

<sup>2</sup>Here and in the future a national economic installation is understood to be enterprises, kolkhozes, sovkhoses, organizations, institutes, and educational institutions.



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Creation and training of CD formations is a matter that is not only extraordinarily important but also very complicated since they include a large number of people, equipment, and transportation that is constantly occupied in the national economy.

The organizational structure and technical equipment in the formations must primarily be determined by their purpose and the specifics of the industrial activities of the installations upon which they are based. Taken into consideration here are the installation's production features and the availability at the installation of the corresponding equipment and mechanisms required to accomplish rescue and urgent emergency restoration operations.

When training territorial formations one must know which natural calamities are the greatest threat to the given region and what aftereffects can occur in the event of an accident at a particular national economic installation. The CD chief of a city, rayon, and oblast must evaluate the nature and volume of possible rescue and urgent emergency restoration operations (SNAVR) and, on this basis, determine the composition, size, and technical equipment for the formations being set up. It is fully evident that in regions with increased danger of fire formations must have special fire-fighting equipment and gear for transportation of water, bulldozers, trenchers, and forest plows. Formations in regions where flooding and mud slides are probable must be equipped with flotation equipment, rescue devices, and earth-moving equipment for construction of dikes, run off channels, and other protective structures. The predominant types of equipment in regions that are susceptible to seismic activity naturally will be that used to remove rubble and to clear away accidents involving plumbing and heating networks and to fight fires.

CD formations are manned and equipped so that, if they are called upon to engage in SNAVR, this will not disrupt the production activities at installations. One must also consider the fact that formations must be prepared for operations in response to very compressed suspenses.

Special attention when formations are being manned is placed on careful selection of the command and supervisory staff. These people must possess not only good organizational capabilities and high volitional qualities, but also must possess special knowledge and, where possible, know-how in operating in regions where natural calamities or industrial accidents have occurred. Late or what is worse unsubstantiated decisions by commanders can lead to bad consequences.

Depending upon subordination formations are brought to readiness upon instructions from the corresponding installation, rayon, city, and oblast (kray) CD chiefs. Determined ahead of time are: the notification sequence; place and time for formation personnel to assemble; places, times, and procedure for obtaining transportation, equipment, and funds; formation concentration areas and routes for their movement and time of arrival in these regions; time and sequence for checking formation readiness.

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The level of formation readiness is determined based upon results in their accomplishing practical missions during exercises or based upon the results of their operations when fighting natural calamities and eliminating the aftereffects of industrial accidents.

Responsibility for formation training lies with installation CD chiefs. The following are the basic CD formation training missions: assimilation by the personnel of the equipment and instruments available to the formations and the drills and methods of accomplishing SNAVR in centers of destruction and in regions of natural calamities and industrial accidents.

Successful and timely accomplishment of the missions with which CD formations are tasked greatly depends on the level of training of their command and supervisory staff and personnel.

Such methods of instruction as practical, demonstration, and instructional-methodological lessons, group drills, and seminars provide good results in training command and supervisory personnel. Theoretical knowledge and practical skills are reinforced and refined at command and staff exercises and drills and during special tactical lessons and exercises with formations.

The command and supervisory staff in formations are basically trained directly at national economic installation during the conduct of meetings and planned lessons. Meetings of the command and supervisory staff precede lessons with formation personnel. These lessons are conducted by installation CD chiefs, their deputies, leading specialists, and installation CD staff and service chiefs. In addition, formation command and supervisory personnel are trained at city and rayon (interrayon) CD courses. These courses also provide methodological assistance to national economic installation CD chiefs in the preparations for and conduct of command and staff and special tactical exercises with formations.

The training of formation command and supervisory personnel also includes development of firm methodological skills in the instruction and command and control of formations and the organization of close coordination with other formations, services, and departmental subunits [podrazdeleniye] during joint mission accomplishment. One should insure here that formation commanders carefully and confidently fulfill their responsibilities, skillfully orient themselves and proficiently make substantiated decisions in any situation, carefully pass along these decisions to subordinates, and firmly implement the decisions made.

Formation commanders are responsible for the training and instruction of formation personnel. Instruction includes training based on the program of the universal compulsory minimum knowledge the population requires to protect against weapons of mass destruction, as well as special and special tactical training.

Various forms and methods of instruction are employed to train formation personnel: practical exercises and drills, group lessons, passing norms, competitions and formation inspections, as well as special tactical lessons and exercises.

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During the special training formation personnel study the layout, operational procedure, and rules for storage and care of equipment, mechanisms, communications gear, instruments, and assigned equipment available and they elaborate the routines and methods of operating under varied conditions. The basic methods for instructing formation personnel at this stage are practical and special tactical lessons, drills, and passing CD norms. Their goal is to achieve highly trained students and to inculcate in them the skills and ability to operate with initiative under the conditions of a complex situation. The organization and methodology of practical lessons depend upon a content of the material, the training goal, the trainee complement and the level of their training.

A practical lesson includes, as a rule, an explanation, demonstration of the actions or routines, and an exercise (drill). The demonstration makes it possible to visually represent for the trainee the routine or action in overall form. Depending upon the goals and the content of the lessons, the demonstration is accomplished in various ways: with the aid of specially-trained students, showing training films, use of visual aids, and so on. The bulk of the time here is devoted to the exercise (drill) in which the trainees accomplish the routines and methods of operation.

Special tactical lessons are conducted at full-scale sectors, in training villages, or directly at national economic installations. During these lessons formations participate in full complement with assigned equipment; personnel must have individual protective equipment, dosimeters, and attached tools.

During special tactical lessons formations accomplish rescue and urgent emergency restoration operations under conditions that approximate real life to the maximum. Along with refinement of the individual actions of the trainees, the actions of the personnel in the elements and groups which go to make up the formations are worked out during these lessons, as are questions of their command and control. If themes are not fully elaborated at the practical and special tactical lessons, then the formations are provided time for additional training based on the decision of the corresponding CD chief.

Special tactical exercises are the most effective form of practical instruction for formation command and supervisory staff and personnel. These exercises must raise the level of training of the students, make their knowledge more profound, and reinforce skills involving practical activities. Special tactical exercises with formations are divided according to purpose into planned, inspection, demonstration, and experimental.

The basic goal of planned exercises is to refine the coordination of formation activities; working out questions of coordination between them; refinement of the practical skills of commanders and staffs in formation command and control, as well as training personnel and improving their readiness.

During planned exercises formation personnel refine skills in working with equipment, instruments, and tools; they master the routines of searching for and extricating injured and providing them assistance, they learn to determine the location of protective structures and installation communications and

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accomplish urgent emergency operations involving them. Such exercises should be conducted according to integrated themes which include the entire volume of problems and missions accomplished by formations in a situation which is most like that which might occur realistically, taking into account characteristic local features. It is advisable to enlist for the exercises several completely manned general-purpose formations and CD service formations simultaneously. CD chiefs and the CD staff and service chiefs to whom the formations are subordinate serve as exercise directors.

The director of a special tactical exercise personally and through his assistants insures that formation commanders correctly evaluate the situation, rapidly make decisions, issue brief and careful instructions, and demonstrate the initiative, independence, and decisiveness in the actions of personnel, and so on.

During the planning and preparation for special tactical exercises special attention is devoted to selection of the place (area, installation) where they will be conducted. As a rule, such exercises must be conducted where there is the most certainty of a natural calamity or emergency situation occurring. However, in a number of instances, it is advisable to conduct exercises at installations where it is necessary to accomplish a complex of operations to prevent possible calamities. Thus, prior to the onslaught of spring rains, corresponding formations during the exercise participate in practical operations to strengthen and repair hydrotechnical structures, build dams and dikes, and protect basements and the first floors of buildings against flooding. Inspection special tactical exercises determine formation readiness to accomplish practical missions, as well as the ability of command and supervisory staff to guide subunits in the accomplishment of SNAVR.

Routines for subunit command and control under various conditions of the situation are demonstrated at demonstration special tactical exercises with formations and they improve the methodological training of the supervisory and command and supervisory staff.

Experimental special tactical exercises are conducted with formations for the purposes of further refining the organizational and organic structure and technical equipment of formations, the routines and tactics of their operations under varied conditions of the situation, determination of scientifically substantiated norms, as well as for the purposes of checking the capabilities in the employment of new types of equipment for accomplishment of CD missions. It should be noted here that the most practical value lies with recommendations and conclusions obtained as a result of an experimental special tactical exercise which has been conducted under the realistic conditions of the elimination of the aftereffects of natural calamities and industrial accidents.

Formation training quality substantially depends on the availability and condition of training facilities--training villages and full-scale sectors equipped with classrooms, special training areas, CD training points, mock-ups and instruments, visual aids, and training materials. Training villages created at large national economic installations and in cities, rayons, and oblasts form the foundation of the training facilities utilized to provide practical instruction for formations.

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Full-scale sectors or specially equipped training positions are built at those installations where it is not possible to build training villages. Rayon, (city, oblast) training villages are also employed.

One must take into consideration local conditions and the nature of the possible actions of the formations when organizing training facilities for practical instruction. This makes it possible for formation training to be most effective.

2. Principles of the employment of CD formations during natural calamities and production accidents

The basic mission of CD formations during natural calamities and when eliminating the aftereffects of industrial accidents is to rescue people and valuables. The nature and procedures which formations follow during accomplishment of this mission depend on the type of calamity or accident, the evolving situation, the size and readiness of the CD forces enlisted, the time of year and day, weather conditions, and other factors.

Timely organization and actively conducted reconnaissance which take into consideration specific conditions to a significant degree influence the success of formation actions during natural calamities and elimination of the aftereffects of industrial accidents. Reconnaissance is conducted in accordance with the missions of the CD forces and the nature of the actions called for.

As a rule, the installation (rayon, city) CD chief assigns the reconnaissance mission. He indicates the goal of the reconnaissance, what information and by what time it is required, where and for accomplishment of which missions the main forces are to be concentrated, and what resources to be employed for this purpose.

In the regions of natural calamities reconnaissance determines the boundaries of the center (region) of the calamity and the direction of its distribution; installations and population points which are directly threatened; areas for people to gather; approach routes for equipment to reach work areas; condition of damaged buildings and structures and the presence in them of injured who require immediate assistance; the locations of accidents on technological lines and municipal power networks, the condition of manholes and cut-off devices and the amount they are damaged; SNAVR volumes, working conditions, and the ability to employ mechanized equipment. Air reconnaissance can be conducted in order to obtain up-to-date data on the scope of the natural calamity and the overall nature of its aftereffects.

In the event of industrial accidents reconnaissance specifies the degree and volume of damage, the ability to work without individual protective equipment; damage which might complicate the situation or make the aftereffects of the accident more severe; areas where people have congregated and the degree of threat to their lives; and the condition of industrial and municipal power networks.

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Reconnaissance groups (elements) conduct reconnaissance. Their number depends upon the size of the area encompassed by the natural calamity or the scale of the accident and the specifics of the national economic installation at which the accident has occurred. Each group (element) receives a specific mission, installation, or reconnaissance sector and is supplied with communications and transportation resources.

As a rule, reconnaissance groups include specialists who know the construction plan for the populated points, the specifics of the industry, and the location of national economic installations in the region of the calamity, and the special features of the equipment at the enterprise where the accident has occurred. If the accident took place at an enterprise where strong toxic substances are being used, the reconnaissance groups must contain chemical specialists with the corresponding reconnaissance instruments, as well as medical workers.

Information gathered by reconnaissance groups is transmitted to the CD staffs where it is generalized and analyzed in order to more fully evaluate the disaster area for taking effective measures to fight natural calamities or eliminate the aftereffects of an accident.

A grouping of resources, the composition of which depends on the type and scale of the calamity (accident), the availability of resources, the nature and volume of the work, and the special features of local conditions, is created to battle the natural calamity and eliminate the aftereffects of an industrial accident.

CD formations located in the area of the natural calamity or industrial accident and where necessary, by decision of the senior CD chief--also formations from neighboring regions and cities--are enlisted to accomplish SNAVR. Formation personnel are notified about the assembly using a procedure envisioned by the corresponding plans. Taking into account the surprise nature of natural calamities and industrial accidents, notification must be so organized that assembly signals reach personnel in the shortest possible time. Assembly areas and bringing installation formations to readiness usually are selected within the territory of the national economic installation, with assembly regions for territorial formations on the axes of their movement towards the forthcoming work areas. Time expended by the formation to muster is included in the established readiness periods.

A CD resource grouping for elimination of the aftereffects of a natural calamity and industrial accident is set up upon arrival of the formations and other forces in the region of the natural calamity (accident). The first to go to work are the installation and territorial formations from the rayons encompassed by the calamity. They form the first echelon of the resource grouping. A second echelon and a reserve which are employed to reinforce the first echelon, expansion of the front of operations, or accomplishment of preventive measures for the purposes of localizing the aftereffects of an industrial accident are created from the formations from neighboring regions and cities which arrive later.

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Formations move directly from assembly areas to the area of the natural calamity and industrial accident. Since there may be fires and rubble as well as destroyed bridges and crossings along the formation routes of movement, necessary measures must be taken to insure their unimpeded movement.

Formations concentrate in the area of the natural calamity (accident) at sectors designated for them which insure rapid access to work areas. Formations receive specific missions here. The formation commander bears personnel responsibility for successful accomplishment of the mission assigned to the formation. Having been assigned the mission, he clarifies it, evaluates the situation, makes a decision, issues a verbal order, and organizes the work.

While clarifying the assigned mission the commander establishes the nature of the forthcoming activities, the location, and the role of the formation subordinate to him in the force grouping of the senior chief and in accomplishment of the overall mission. He subsequently issues preliminary instructions to subordinates to prepare for action.

Evaluating the situation on the spot, the commander studies the nature of the natural calamity and aftereffects of the accident and determines the volume of forthcoming work and the capabilities of the subordinate formation and of attached resources. He also evaluates the nature of the terrain and takes into account the state of the weather along with other factors which influence accomplishment of the assigned mission. In his decision, the commander determines the sequence of work accomplishment, the missions of subordinate and attached formations, coordination procedures, and measures to organize command and control and comprehensive support to the formations.

The commander in his order points out the situation in the work area, the mission which the formation (where necessary the mission of a neighboring formation) is to accomplish, location of medical aid points, routes and procedure for evacuation of injured, the time operations begin, his location, and the location of his deputy.

Measures involving rescue work and prevention of catastrophic aftereffects of the calamity (accident), prevention of possible secondary causes which might bring about death to people and destruction to valuables are primarily carried out in the areas of natural calamities and at the sites of industrial accidents. Work continues without ceasing until full conclusion.

During the operations the commander continually monitors his formations, directing their forces toward successful accomplishment of the assigned mission. Missions are assigned (passed on) to subordinates depending upon the situation and availability of time via direct verbal orders and instructions and are issued personally by the commander or via the formation staff, as well as by issuing commands and signals. Orders, instructions, and commands must be brief and clear.

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Communications are the basic means which insure the command and control of subordinate formations. Communications are organized on the basis of the order of the commander and instructions from the senior chief through use of formation technical communications equipment and by equipment additionally allocated by the senior chief.

The formation commander must be continually aware of the situation in the work area. When it changes he rapidly makes the corresponding decision and refines or issues new missions to subordinates.

It is very important during work involving elimination of the aftereffects of natural calamities and industrial accidents to maintain uninterrupted coordination between formations. It is achieved through continuity in the activities of the formations in goal, location, and time, and through mutual assistance for more successful accomplishment of the overall mission. Upon accomplishment of assigned missions formations move to their assigned areas and prepare themselves to accomplish new missions should the need arise.

A commandant's service, which does not allow onlookers near the area of the natural calamity or accident, is organized in areas of natural calamity and industrial accident; it controls the movement of CD forces along movement routes, as well as evacuation of the population and valuables; it maintains public order and monitors to see that formations and the population adhere to established movement rules; it guards vital road structures, crossings, state institutions, and other national economic installations. Preservation of civic order formations from national economic installations, as well as militia subunits, perform commandant's service.

### 3. Political-indoctrinational work in CD formations

Successful mission accomplishment by CD formations during natural calamities and production accidents depends to a significant degree upon the level of the political-indoctrinational work with formation personnel.

Political-indoctrinational work in CD formations is organized and conducted based upon the overall statutes on political work within the USSR CD system.

Local party organs guide political work in formations. Party committees (party bureaus) of those national economic installations upon which the formations have been created directly organize the political-indoctrinational work.

Local party organs assigned from among the party aktiv select formation political affairs deputies to reinforce the political-indoctrinational work in the formations. They are assigned to formations containing 30 or more people and, given specific conditions, to smaller formations as well.

Party organs determine the content, forms, and methods of political-indoctrinational work with personnel and provide all subunits with technical means of propaganda, visual agitation, educational books, periodicals, and other materials.



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Indoctrination of the personnel in a spirit of unlimited dedication to the socialist motherland and the Communist Party, unshakable trust in the glory of communism, conscious accomplishment of their patriotic duty and high personal responsibility for the security of the fatherland is the foundation of the political work in CD formations.

The inflexible will of the Soviet man is primarily the result of his ideological conviction. It is this ideological conviction that forms within him steadfastness and courage, initiative, inculcates him with self-possession and discipline, a sense of comradeship and mutual assistance--qualities which facilitate the heroic conduct of people in the most difficult situation.

Profound study of the materials of the 25th CPSU Congress, universal revelation of the might and invincibility of the Soviet state structure, indoctrination of personnel with proletarian internationalism greatly facilitate raising the political consciousness of formation personnel.

Mobilization of formation personnel for successful actions at any time of day with full effort until the job is fully done is an important goal of political work for the battle against natural calamities and elimination of the after-effects of industrial accidents. For these purposes all personnel are informed in a timely manner about the evolving situation and the character of the forthcoming operations, specific missions are levied upon them, and measures are also taken for the support and development among the command and supervisory staff of high volitional qualities, initiative, independence, and the ability to correctly evaluate the situation, make thoughtful and brave decisions, and find the most effective forms and methods of carrying on rescue operations. The command and supervisory staff and the party aktiv manifest special concern that the troops in the formations maintain high moral-psychological and combat qualities.

Political measures are accomplished to mobilize personnel for organized movement to work areas, resourceful, decisive, and skillful actions when carrying out rescue operations, rapid search for injured, quickly providing them medical assistance and evacuating them as assigned. Continual attention is devoted to developing within personnel the desire for the most effective employment of special and engineering equipment and maximum use of its capabilities for full accomplishment of the assigned mission.

Formation commanders and political workers must manifest continual concern about the material-technical and medical support, feeding, and rest for formation troops, adherence to the established mode and safety measures while working, and timely designation of those who excell.

Taking into account the importance of careful coordination of resources enlisted for the battle against natural calamities and elimination of aftereffects of industrial accidents, political-indoctrinational work envisions explanation of general and specific missions of the coordinating subunits, joint political measures directed toward reinforcement of combat cooperation, mutual aid, and assistance during joint accomplishment of assigned missions.

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Also of special significance is systematically keeping formation personnel informed about the evolving situation and passing on new missions to them. Talks with the command and supervisory staff and the party and Komsomol activists and publication of appeals, memoranda, and instructions are widely used in informational work. Battle and "flash" leaflets successfully used during the Great Patriotic War are becoming an effective informational form.

Commanders and political workers must in a timely manner inform party organs about the political-moral state of formation personnel and of the political-indoctrinational work conducted. The use of certain methods, forms, and types of political work in formations depends upon specific conditions and the situation which evolves during accomplishment of assigned missions and so on.

The role of political workers in political-indoctrinational work with CD formation personnel was clearly manifested during the elimination of huge forest and peat fires in a number of regions of the country. Local party organs, the party committees (party bureaus) at national economic installations, and primary party organizations insured the high readiness and effective actions of the formations. Experienced party activists possessing practical skills in indoctrinational work with people in the shortest possible time mobilized formations for accomplishment of assigned missions. When extinguishing fires formations often operated in areas significantly removed from their base enterprises. This required that party organs create mobile operational propaganda groups. Using technical equipment, particularly the auto clubs at CD courses and from rayon cultural sections and supplied with the requisite literature, visual aids, and special movies, these groups conducted mass political work directly on the scene.

Appeals by party organs and extraordinary commissions, memoranda, and leaflets were widely used in political-indoctrinational work with formation personnel. Formation personnel welcomed the newspapers and magazines which talked about know-how in extinguishing fires and about those who excelled in the fire-fighting operations. Along with publication of appeals, memoranda, and leaflets special radio broadcasts from mobile stations equipped with loudspeakers were also employed. The mobility of this equipment kept the propaganda up to date and made it possible to rapidly concentrate forces where the most difficult situation evolved.

Realistic vital conditions continually set down rigid requirements for flexibility and proficiency in the organizational and political work of formation commanders and political workers, for an improvement in the role of every communist. The events in the winter of 1976, when CD forces in the southern part of the Ukraine and Moldavia were called upon to eliminate the aftereffects of hurricane winds and heavy snowfalls serves as confirmation of this. The difficult situation and the requirement to reinforce the political influence on people who were battling nature night and day sharply posed the question about the continuity of political work at all links, of employment of the most effective forms and methods of this work.

The mission facing the formation troops--eliminate the aftereffects of the natural calamity in the shortest possible time--required that each formation,

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team, group, and person work at full pace, selflessly, not taking time or fatigue into account.

Individual indoctrinational work acquired enormous significance. Party organs everywhere refined the assignment of the party aktiv in the formations. The activists continually worked with the troops, monitored to see that the people were supplied with everything required, concerned themselves about their food and rest.

The important significance of indoctrinational work directed towards the mobilization and harmony of the collectives, to revelation of the creative capabilities of people, to development of a sense of duty and mutual assistance was once again confirmed by events in the Black Sea area.

Organization of political work with formation personnel has its own special features when eliminating the aftereffects of industrial accidents. Here, its forms, methods, and means are determined, as a rule, by the relatively small area of the working sector, by increased demands to adhere to safety measures, and by compressed suspenses as well.

Formation activities during the elimination of the aftereffects of industrial activities are characterized by great complexity and sometimes even by danger to peoples' lives. This circumstance opens up for party organizations a broad field of activities to improve the moral-political and psychological training of formation personnel.

Moral-political and psychological training is an integrated process of indoctrinating formation commanders and troops with those ideological, moral, and psychological qualities which allow them to successfully carry out rescue and urgent emergency restoration operations, as well as work involving elimination of the aftereffects of natural calamities and large industrial accidents. A leading role in this process falls to moral-political tempering. It is these very political convictions on the part of personnel, their views and deeds that create in the formations that high spiritual uplift without which assigned missions cannot be successfully accomplished.

The moral-political qualities of the Soviet people are formed by the entire system of our life, by the continual goal-oriented ideological-indoctrinational work of the party, by all of its organs and organizations.

The foundation of the moral-political and psychological tempering of formation personnel is primarily laid by the ideological-indoctrinational work within the labor collective. For it is here under the supervision of the party organization that the active vital position of its members is formed, citizenship is taught, a sense of patriotic duty and the readiness to come to the defense of socialism's conquests is inculcated, and relationships of friendship and comradely mutual assistance are formed.

Ideological work conducted within the formations themselves facilitates the moral-political and psychological tempering of formation personnel. It is

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directed toward development within the personnel of a psychological readiness for operations in a difficult situation, for the sudden manifestations of nature's natural forces, for the development of the ability to withstand danger, to ward off its negative emotional and physical effects, to successfully conduct rescue and restoration operations.

The high degree of personnel readiness requires that every formation be harmonious, coordinated, easily controlled, that it be able to successfully accomplish its assigned missions. This broad and multifaceted problem is successfully solved only given integrated, planned, profoundly thought out, and goal-oriented pressures on all aspects of the life and activities of formation personnel. Such pressure begins from the day that the individual joins the formation. They first explain the missions and responsibilities to the trooper. Subsequently moral-political and psychological training is conducted continually during the process of peoples' daily labor activities, during lessons in exercises, when eliminating the aftereffects of natural calamities and industrial accidents.

We know of many formations where the command element, political workers, party, and Komsomol aktivs skillfully use various methods of indoctrinational work to bring people together. This includes popularization of the achievements of CD otlichniks, individual indoctrinational work and broad development of socialist competition, creation of a competitive spirit during drills, lessons, and exercises. As a result the level of formation training is improved and discipline in them is reinforced. In turn, the harmony of the formations, the high authority of commanders and political workers, trust in comrades, and correct mutual relations between them insures a general psychological uplift and also facilitates vitality and successful actions on the part of every collective member.

Exercises and repeated drills by personnel in the accomplishment of both individual routines and activities as well as in the total complex of rescue and restoration operations in a situation that approximates reality to the maximum provides a high psychological return. For it is here that a vital principle of psychological tempering--introduction into peoples' activities of the permissible elements of stress, danger, and risk--is implemented. Stress is achieved by increasing the physical and nervous-psychological loads on personnel, by creation of a psychological model of a real situation, as well as of conditions which can occur as the aftereffects of natural calamities and industrial accidents are eliminated. The elements of stress and danger gradually train people to overcome the highest psychological load, to actively and resolutely accomplish the tasks assigned to them in a difficult situation.

It is no longer a rarity for trainees to be called upon to go through strips of fire and water barriers, to move about along obstacles while wearing individual protective equipment, to climb a storm or fire ladder, to come off a tower using a rope. All of this and other elements introduced into the CD formation training system, naturally within reasonable limits and adhering to safety measures, has a noticeable effect. People train themselves to physically and psychologically overcome difficulties which they might encounter in practice.

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Moral-political and psychological tempering obtained by formation personnel during the training process is visibly manifested during the elimination of the aftereffects of natural calamities, in particular those like the heavy snowstorm in the Black Sea area, flooding in Leningrad, the earthquakes in central Asia, and forest fires. Under the most difficult conditions personnel operated bravely and courageously, worked selflessly under great stress, demonstrating in the process initiative, bravery, high consciousness, and discipline.

Formation personnel are often called upon to do rescue work along with the population which finds itself in the area of natural calamities. Therefore, formation commanders, political workers, and the party aktiv under the guidance of local party organs must actively participate in the political work amongst the inhabitants, explain to them the evolving situation, the required safety measures and norms of conduct, and the routines and methods for battling nature. They must support the inhabitants' self-control and self-possession and their trust in surmounting the calamities and reestablishment of normal living and working conditions.

**PHOTO CAPTION**

1. p 11 At lessons and exercises personnel acquire skills and the ability to operate in a situation that approximates reality to the maximum.

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